* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Utility model registration claim]
[Claim 1] Do so that the disk loading tray contained in the cabinet can take to a cross direction. Do so that a wrap canopy attaches the back end in a cabinet and can rotate this disk loading tray up and down. The rail which engages with the guide which protruded on the back end of a disk loading tray at this canopy is prepared in a cross direction for a long time. This rail is a disk player characterized by being made as [close / a canopy / with receipts and payments of a disk loading tray / it inclines up and down, is formed, and / with said guide / open and].

[Translation done.]

DETAILED DESCRIPTION

[Detailed explanation of a design]
(Field of the Invention)
This design is related with amelioration of a closing motion loading device about a disk player.
(Prior art)
Conventionally, there were some which are shown in Figs. 5 thru/or 6 as a closing motion loading device of a disk player. This disk loading tray 2 is attached in the back end of the wrap canopy 3 by the cabinet 1, and this is made as [close / when a canopy 3 rotates up and down focusing on this attachment section (support section 4) / it / open and] while being made as [take / to a cross direction / the disk loading tray 2 contained in the cabinet 1]. Among these, the breaker style of a canopy 3 consists of a gear train 7 which slows down the drive of the motor 6 for canopy closing motion formed in the cabinet 1, and this motor 6 for canopy closing motion, and is delivered the internal-tooth gear 5 prepared in the canopy 3 to said internal-tooth gear 5 of a canopy 3.
Actuation of a closing motion loading device is performed as follows.
When opening, the drive of the motor 6 for canopy closing motion is transmitted to the internal-tooth gear 5 of a canopy 3 by the gear train 7, and a canopy 3 is opened upwards focusing on the support section 4 of a cabinet 1. If it finishes opening a canopy 3, a control circuit (illustration abbreviation) will work and the motor 6 for canopy closing motion will be suspended. Then, the motor (illustration abbreviation) of the disk loading tray 2 is made to drive, and the disk loading tray 2 is taken out to the front.
When closing, inverse rotation of each motor is carried out, and it is based on a procedure contrary to the above. That is, the disk loading tray 2 is back put in by the inverse rotation of the motor of the disk loading tray 2. Then, inverse rotation of the motor 6 for canopy closing motion is carried out by the control circuit, and a canopy 3 is closed.
Thus, closing motion loading of a disk player was performed.
(Technical problem which a design tends to solve)
However, with the above-mentioned configuration, the motor 6 for canopy closing motion and the gear train 7 are needed separately from the motor for closing motion loading of the disk loading tray 2. Moreover, the passive circuit elements which control the forward inverse rotation of two motors and the drive procedure of two motors are needed from the relation between closing motion of a canopy 3, and closing motion of the disk loading tray 2. Therefore, it had the problem of being cost quantity while the disk player using the closing motion loading device of the above-mentioned configuration had complicated manufacture.
It was made in order to solve the above-mentioned problem, and by using the receipts-and-payments actuation to the cross direction of the disk loading tray 2 also [switching action / of a canopy 3], this design makes unnecessary the motor 6 for canopy closing motion, it is easy to manufacture and offers the cheap disk player of cost.
(The means for solving a technical problem)
Do the disk player of this design so that the disk loading tray contained in the cabinet can take to a cross direction. Do so that a wrap canopy attaches the back end in a cabinet and can rotate this disk loading tray up and down. The rail which engages with the guide which protruded on the back end of a disk loading tray at this canopy is prepared in a cross direction for a long time. This rail is made as [close / a canopy / with receipts and payments of a disk loading tray / it inclines up and down, is formed, and / with said guide / open and].
(Operation)
If the disk loading tray 2 comes out to the front, the guide which protruded on the back end of this disk loading tray 2 will move along with the rail formed in the canopy 3. Shortly after the disk loading tray 2 begins to move to the front by this, a canopy 3 will open upwards, and if the disk loading tray 2 comes out to the front, it is stopped. Moreover, if the disk loading tray 2 begins to

move back, the canopy 3 is opened for a while, but a canopy 3 closes at the same time the disk loading tray 2 is settled into a cabinet 1.
(Example)
The disk player of this design is explained in full detail based on the example shown in Figs. 1 thru/or 4 . In addition, the same sign is used for the same configuration member as the conventional example (Fig. 5 , Fig. 6).
Fig. 1 is a perspective view which fractured some disk players.
A disk player is made as [take / to a cross direction / the frontloading chassis 8 top which the disk loading tray 2 contained in the cabinet 1 prepared on the substrate 11 of a cabinet 1], and it is made as [rotate / the wrap canopy 3 attaches the back end 31 in a cabinet 1, and / this disk loading tray 2 / up and down].
Anchoring of the canopy 3 to a cabinet 1 is supported to revolve for the back end 31 of a canopy 3 to the tie-down plate 13 which hung from the top plate 12 of a cabinet 1 (it is made to hang in a cabinet 1), enabling free rotation (a sign 4 shows the support section). Although not illustrated, both the right-and-left back end of a canopy 3 is supported to revolve in this way. Therefore, a canopy 3 can be rotated up and down focusing on this support section 4. When the front end 32 of a canopy 3 rotates up and a canopy 3 is opened, the disk loading tray 2 can be taken out ahead. If it is again put into the disk loading tray 2 in a cabinet 1, the front end 32 of a canopy 3 will be rotated caudad, and a canopy 3 will be closed.
The disk player of this design interlocks the receipts-and-payments actuation to the cross direction of the disk loading tray 2, and the switching action of a canopy 3, and is made as [close / a canopy 3 / with receipts and payments of the disk loading tray 2 / open and].
Next, this closing motion loading device is explained.
The guide 22 is protruded on the back end 21 of the disk loading tray 2. On the other hand, the rail 33 which engages with said guide 22 prepared in the disk loading tray 2 is formed in a cross direction for a long time at the canopy 3. This rail 33 inclines up and down, is formed, and is made as [close / a canopy 3 / with receipts and payments of the disk loading tray 2 / with said guide 22 / open and]. That is, the configuration of a rail 33 has prepared continuously the inclination which falls gradually towards the front from this crevice 33a while preparing crevice 33a cut deeply upwards in the back end section. From the posterior part, short steep slope section 33b and long gradual slope section 33c were formed continuously, and this inclination forms stopper 33d in the front end section of this long gradual slope section 33c. Although such a rail 33 may be formed in the right-and-left side plates 34 and 34 of a canopy 3, it may be prepared in the inside center section of the canopy 3 for a long time at a cross direction.
When the disk loading tray 2 is contained in a cabinet 1 and the canopy 3 is closed, said guide 22 is located in crevice 33a prepared in the back end section of a rail 33, and the engagement is solved (refer to the 2nd Fig.). Moreover, when a canopy 3 is opened and the disk loading tray 2 has come out to the front, said guide 22 is suspended by stopper 33d prepared in the front end section of a rail 33 (refer to the 4th Fig.). Sign a is the boundary of crevice 33a and steep slope section 33b, and Sign b is the boundary of steep slope section 33b and gradual slope section 33c.
Hereafter, actuation of the closing motion loading device of this disk player is shown.
First, Figs. 2 thru/or 4 explain the case where it opens.
By actuation of closing motion SW (illustration abbreviation), the disk loading tray 2 is moved forward (arrow-head A1 direction). The guide 22 which protruded on the disk loading tray 2 moves forward with the disk loading tray 2. When a guide 22 slides on the between (steep slope section 33b) from a points of a rail 33 to b points (cam action), a canopy 3 rotates upward (arrow-head B1 direction) focusing on the support section 4, and a canopy 3 is opened in the location shown with 3rd [**] Fig. alternate long and short dash line. Thus, in the condition that the canopy 3 is opened, loading of the disk loading tray 2 is carried out to front. At this time, a guide 22 is still the condition that slid on ** (gradual slope section 33c) from b points to this stopper 33d, and the canopy 3 opened (refer to 4th [**] Fig. R> Fig.).
Next, the case where it closes is explained.
By actuation of closing motion SW, the disk loading tray 2 is moved backward (arrow-head A 2-

way). A guide 22 engages with the rail 33 of a canopy 3, and moves backward. A guide 22 slides on the between (gradual slope section 33c) from stopper 33d of a rail 33 to b points with the condition of having opened the canopy 3. After that, then a guide 22 slide on the between (steep slope section 33b) from b points to a points (cam action). Thereby, a canopy 3 rotates downward (the direction of arrow-head B-2) focusing on the support section 4, and the disk loading tray 2 and a canopy 3 return to the original location. That is, as shown in Fig. 2 , the disk loading tray 2 is contained in a cabinet 1, and a canopy 3 is closed.

(Effectiveness of a design)

Cost can be made cheap, while according to the disk player of this design there are few components mark, it is lightweight and manufacture is easy, since the actuation to the cross direction of a disk loading tray is used as power of the breaker style of a canopy as stated above.

[Translation done.]

TECHNICAL FIELD

(Field of the Invention)
This design is related with amelioration of a closing motion loading device about a disk player.

[Translation done.]

PRIOR ART

(Prior art)
Conventionally, there were some which are shown in Figs. 5 thru/or 6 as a closing motion loading device of a disk player. This disk loading tray 2 is attached in the back end of the wrap canopy 3 by the cabinet 1, and this is made as [close / when a canopy 3 rotates up and down focusing on this attachment section (support section 4) / it / open and] while being made as [take / to a cross direction / the disk loading tray 2 contained in the cabinet 1]. Among these, the breaker style of a canopy 3 consists of a gear train 7 which slows down the drive of the motor 6 for canopy closing motion formed in the cabinet 1, and this motor 6 for canopy closing motion, and is delivered the internal-tooth gear 5 prepared in the canopy 3 to said internal-tooth gear 5 of a canopy 3.
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When closing, inverse rotation of each motor is carried out, and it is based on a procedure contrary to the above. That is, the disk loading tray 2 is back put in by the inverse rotation of the motor of the disk loading tray 2. Then, inverse rotation of the motor 6 for canopy closing motion is carried out by the control circuit, and a canopy 3 is closed.
Thus, closing motion loading of a disk player was performed.

EFFECT OF THE INVENTION

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TECHNICAL PROBLEM

(Technical problem which a design tends to solve)
However, with the above-mentioned configuration, the motor 6 for canopy closing motion and the gear train 7 are needed separately from the motor for closing motion loading of the disk loading tray 2. Moreover, the passive circuit elements which control the forward inverse rotation of two motors and the drive procedure of two motors are needed from the relation between closing motion of a canopy 3, and closing motion of the disk loading tray 2. Therefore, it had the problem of being cost quantity while the disk player using the closing motion loading device of the above-mentioned configuration had complicated manufacture.
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MEANS

(The means for solving a technical problem)
Do the disk player of this design so that the disk loading tray contained in the cabinet can take to a cross direction. Do so that a wrap canopy attaches the back end in a cabinet and can rotate this disk loading tray up and down. The rail which engages with the guide which protruded on the back end of a disk loading tray at this canopy is prepared in a cross direction for a long time. This rail is made as [close / a canopy / with receipts and payments of a disk loading tray / it inclines up and down, is formed, and / with said guide / open and].

OPERATION

(Operation)
If the disk loading tray 2 comes out to the front, the guide which protruded on the back end of this disk loading tray 2 will move along with the rail formed in the canopy 3. Shortly after the disk loading tray 2 begins to move to the front by this, a canopy 3 will open upwards, and if the disk loading tray 2 comes out to the front, it is stopped. Moreover, if the disk loading tray 2 begins to move back, the canopy 3 is opened for a while, but a canopy 3 closes at the same time the disk loading tray 2 is settled into a cabinet 1.

EXAMPLE

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The disk player of this design is explained in full detail based on the example shown in Figs. 1 thru/or 4 . In addition, the same sign is used for the same configuration member as the conventional example (Fig. 5 , Fig. 6).
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When the disk loading tray 2 is contained in a cabinet 1 and the canopy 3 is closed, said guide 22 is located in crevice 33a prepared in the back end section of a rail 33, and the engagement is solved (refer to the 2nd Fig.). Moreover, when a canopy 3 is opened and the disk loading tray 2 has come out to the front, said guide 22 is suspended by stopper 33d prepared in the front end section of a rail 33 (refer to the 4th Fig.). Sign a is the boundary of crevice 33a and steep slope section 33b, and Sign b is the boundary of steep slope section 33b and gradual slope section 33c.
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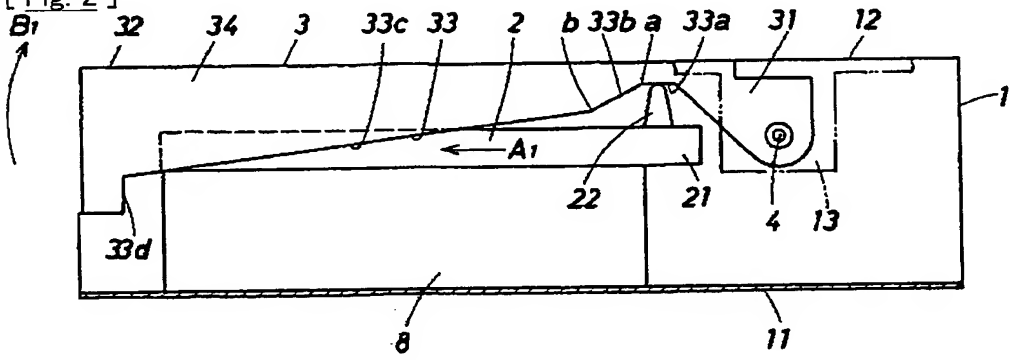
way). A guide 22 engages with the rail 33 of a canopy 3, and moves backward. A guide 22 slides on the between (gradual slope section 33c) from stopper 33d of a rail 33 to b points with the condition of having opened the canopy 3. After that, then a guide 22 slide on the between (steep slope section 33b) from b points to a points (cam action). Thereby, a canopy 3 rotates downward (the direction of arrow-head B-2) focusing on the support section 4, and the disk loading tray 2 and a canopy 3 return to the original location. That is, as shown in Fig. 2 , the disk loading tray 2 is contained in a cabinet 1, and a canopy 3 is closed.

DESCRIPTION OF DRAWINGS

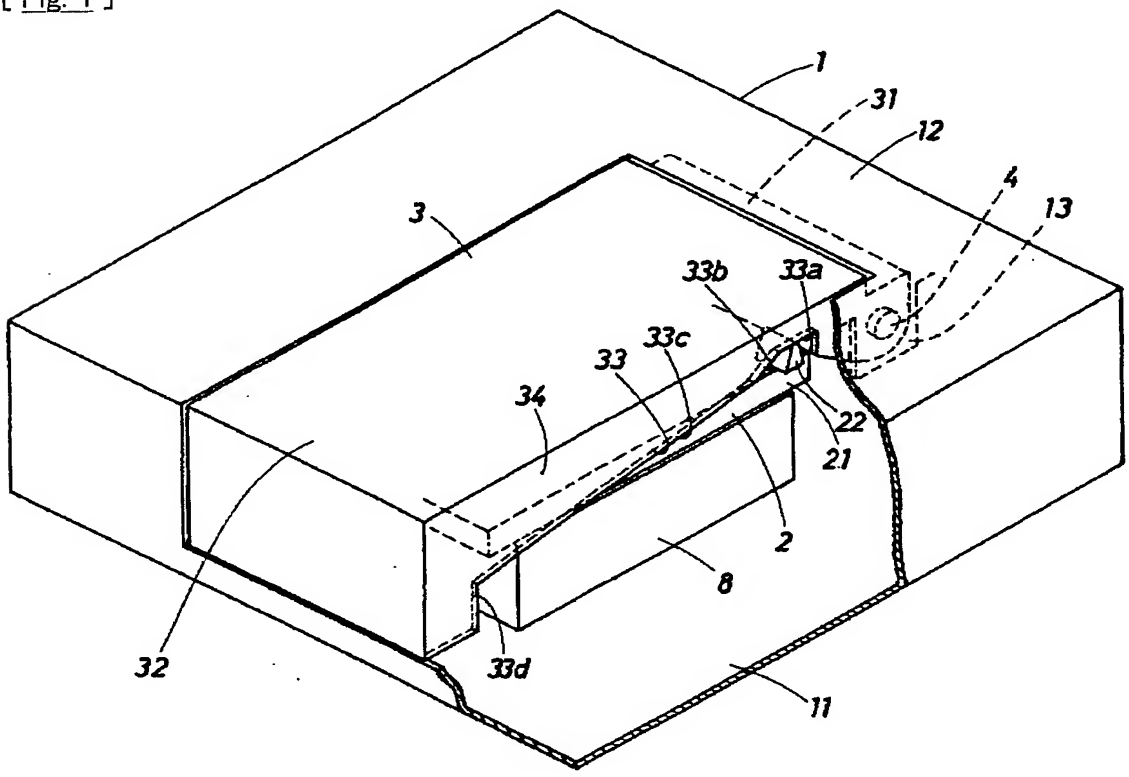
[Brief Description of the Drawings]
Figs. 1 thru/or 4 show one example of this disk player. Drawing of longitudinal section where the perspective view in which Fig. 1 fractured the part, and Fig. 2 closed the canopy, and the disk loading tray was contained in the cabinet, Drawing of longitudinal section showing the point which a disk loading tray comes out of Fig. 3 forward, and is opened, Drawing of longitudinal section which the disk loading tray came out of the 4th drawing 4 Fig. forward, and the canopy opened, Figs. 5 and 6 show the conventional example, as for Fig. 5 , a canopy is closed and disk loading trays are drawing of longitudinal section contained in the cabinet, and drawing of longitudinal section where the disk loading tray was taken out and the canopy opened Fig. 6 .
1 .... Cabinet
2 .... Disk loading tray
22 .... Guide
3 .... Canopy
33 .... A rail, 33a .. Crevice
33b .... The steep slope section, 33c .. Gradual slope section
33d .... Stopper
4 .... Support section
8 .... Frontloading chassis

DRAWINGS

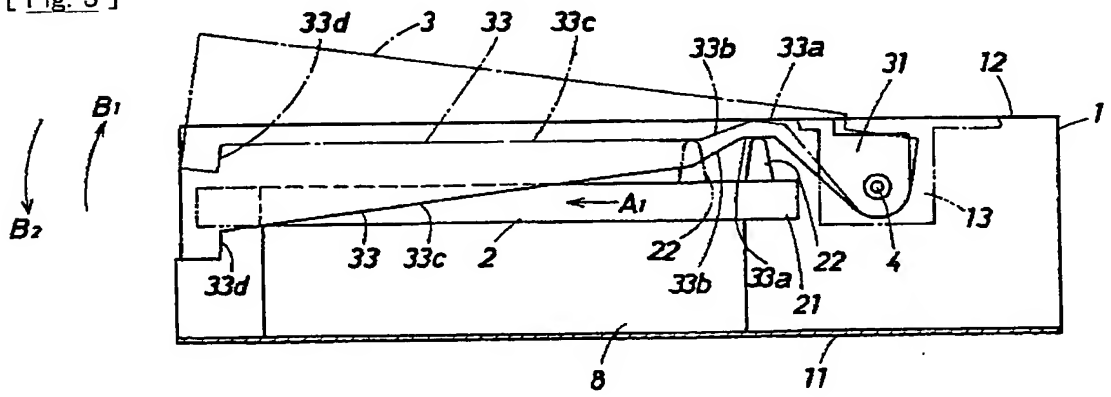
[Fig. 2]



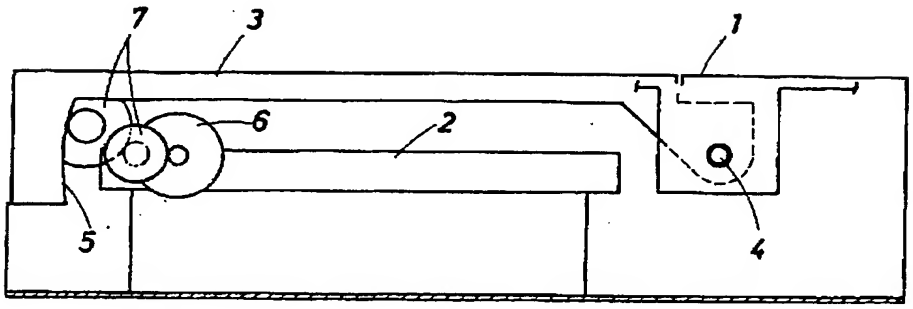
[Fig. 1]



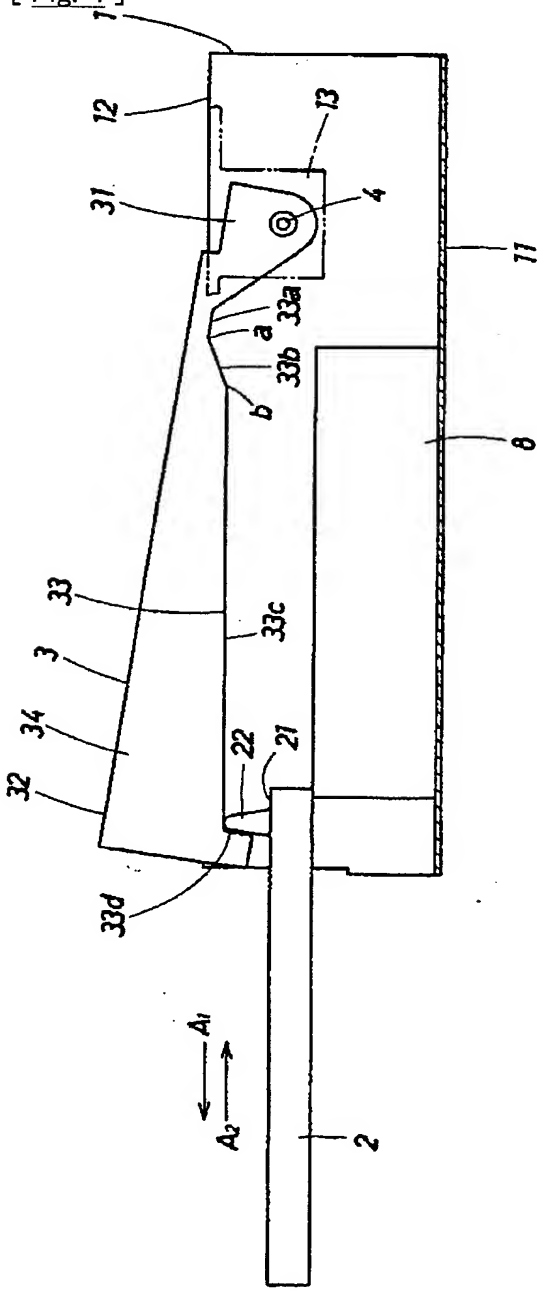
[Fig. 3]



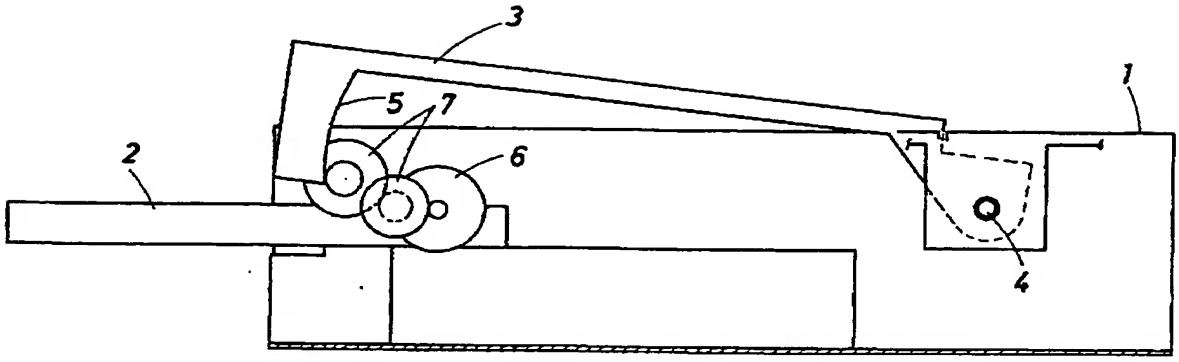
[Fig. 5]



[Fig. 4]



[Fig. 6]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(54)【考案の名称】　ディスクプレーヤー

1

【実用新案登録請求の範囲】

【請求項１】キャビネット内に収納したディスクローディングトレイが前後方向へ出し入れできるようになされ、このディスクローディングトレイを覆う天蓋が後端をキャビネットに取付けて上下に回動できるようになされ、この天蓋にはディスクローディングトレイの後端上に突設したガイドと係合するレールが前後方向に長く設けられ、このレールは上下に傾斜して形成されてディスクローディングトレイの出し入れにともない前記ガイドによって天蓋を開閉することができるようになされていることを特徴とするディスクプレーヤー。

【考案の詳細な説明】

（産業上の利用分野）

本考案はディスクプレーヤーに関し、開閉ローディング機構の改良に関する。

2

（従来の技術）

従来、ディスクプレーヤーの開閉ローディング機構として第５図ないし第６図に示すものがあった。これは、キャビネット１内に収納したディスクローディングトレイ２が前後方向へ出し入れできるようになされているとともに、このディスクローディングトレイ２を覆う天蓋３の後端がキャビネット１に取付けられ、天蓋３がこの取付部（軸支部４）を中心に上下に回動することにより開閉できるようになされているものである。このうち天蓋３の開閉機構は、天蓋３に設けた内歯ギヤ５と、キャビネット１に設けた天蓋開閉用モータ６および、この天蓋開閉用モータ６の駆動を減速して天蓋３の前記内歯ギヤ５へ伝達するギヤ列７からなっている。

開閉ローディング機構の動作は、次のように行われる。開ける場合、天蓋開閉用モータ６の駆動をギヤ列７によ

り天蓋３の内歯ギヤ５に伝達し、天蓋３をキャビネット１の軸支部４を中心に上方へ開ける。天蓋３を開け終わると、制御回路（図示省略）が働いて天蓋開閉用モータ６を停止する。続いて、ディスクローディングトレイ２のモータ（図示省略）を駆動させて、ディスクローディングトレイ２を前方へ出す。

閉じる場合、それぞれのモータを逆回転させ、前記と逆の手順による。つまり、ディスクローディングトレイ２のモータの逆回転によってディスクローディングトレイ２を後方へ入れる。続いて、制御回路により天蓋開閉用モータ６を逆回転させて天蓋３を閉じる。

このようにして、ディスクプレーヤーの開閉ローディングは行われていた。

（考案が解決しようとする課題）

しかし、上記の構成では、ディスクローディングトレイ２の開閉ローディング用のモータとは別個に天蓋開閉用モータ６およびギヤ列７を必要とする。また、天蓋３の開閉とディスクローディングトレイ２の開閉の関係から、２つのモータの正逆回転および２つのモータの駆動手順を制御する回路部品を必要とする。従って、上記の構成の開閉ローディング機構を用いたディスクプレーヤーは、製造が複雑であるとともにコスト高であるという問題があった。

本考案は上記の問題を解決するためになされたもので、ディスクローディングトレイ２の前後方向への出し入れ動作を天蓋３の開閉動作に兼用することにより天蓋開閉用モータ６を不要とし、製造が簡単でコストの安いディスクプレーヤーを提供するものである。

（課題を解決するための手段）

本考案のディスクプレーヤーは、キャビネット内に収納したディスクローディングトレイが前後方向へ出し入れできるようになされ、このディスクローディングトレイを覆う天蓋が後端をキャビネットに取付けて上下に回動できるようになされ、この天蓋にはディスクローディングトレイの後端上に突設したガイドと係合するレールが前後方向に長く設けられ、このレールは上下に傾斜して形成されてディスクローディングトレイの出し入れにともない前記ガイドによって天蓋を開閉することができるようになされているものである。

（作用）

ディスクローディングトレイ２が前方へ出ると、このディスクローディングトレイ２の後端上に突設したガイドが天蓋３に形成したレールに沿って動く。これによりディスクローディングトレイ２が前方へ動き出すとすぐに天蓋３が上方へ開き、ディスクローディングトレイ２は前方へ出てしまうとストップする。また、ディスクローディングトレイ２が後方へ動き出すと天蓋３はしばらく開いているが、ディスクローディングトレイ２がキャビネット１内へ収まると同時に天蓋３は閉じる。

（実施例）

本考案のディスクプレーヤーを第１図ないし第４図に示す実施例に基づいて詳述する。なお、従来例（第５図、第６図）と同じ構成部材には同じ符号を用いている。

第１図は、ディスクプレーヤーの一部を破断した斜視図である。

ディスクプレーヤーは、キャビネット１内に収納したディスクローディングトレイ２がキャビネット１の基板１１上に設けたフロントローディングシャーシ８上を前後方向へ出し入れできるようになされ、このディスクローディングトレイ２を覆う天蓋３は後端３１をキャビネット１に取付けて上下に回動できるようになされたものである。

キャビネット１に対する天蓋３の取付けは、キャビネット１の天板１２から垂下（キャビネット１内に垂下させている）した取付板１３に天蓋３の後端３１を回動自在に軸支（軸支部を符号４で示す）している。図示していないが、天蓋３の左右後端がともにこのように軸支されている。従って、天蓋３はこの軸支部４を中心に上下に回動することができる。天蓋３の前端３２が上方に回動して天蓋３が開かれたとき、ディスクローディングトレイ２を前方に出すことができる。ディスクローディングトレイ２が再びキャビネット１内に入れられると、天蓋３の前端３２は下方に回動して天蓋３が閉じられる。

本考案のディスクプレーヤーは、ディスクローディングトレイ２の前後方向への出し入れ動作と天蓋３の開閉動作を連動させ、ディスクローディングトレイ２の出し入れにともなって天蓋３が開閉できるようになされている。

次に、この開閉ローディング機構を説明する。

ディスクローディングトレイ２の後端２１上にはガイド２２を突設している。他方、天蓋３にはディスクローディングトレイ２に設けた前記ガイド２２と係合するレール３３を前後方向に長く形成している。このレール３３は上下に傾斜して形成され、ディスクローディングトレイ２の出し入れにともない前記ガイド２２によって天蓋３を開閉することができるようになされている。つまり、レール３３の形状は、上方へ深く切込まれた凹部３３ａを後端部に設けるとともに、この凹部３３ａから前方へ向けて漸次下がる傾斜を連続して設けている。この傾斜は後部から、短い急傾斜部３３ｂと長い緩傾斜部３３ｃが連続して形成されたもので、この長い緩傾斜部３３ｃの前端部にストッパ３３ｄを形成している。このようなレール３３は、天蓋３の左右側板３４，３４に設けてもよいが、天蓋３の内面中央部に前後方向に長く設けてもよい。

ディスクローディングトレイ２がキャビネット１内に収納され、天蓋３が閉じられているとき、前記ガイド２２はレール３３の後端部に設けた凹部３３ａ内に位置し、その係合が解かれている（第２図参照）。また、天蓋３が開かれ、ディスクローディングトレイ２が前方へ出て

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いるとき、前記ガイド２２はレール３３の前端部に設けたストッパ３３ｄによって停止せられている（第４図参照）。符号ａは凹部３３ａと急傾斜部３３ｂの境界、符号ｂは急傾斜部３３ｂと緩傾斜部３３ｃの境界である。以下、このディスクプレーヤーの開閉ローディング機構の動作を示す。

まず、開く場合を第２図ないし第４図によって説明する。

開閉ＳＷ（図示省略）の操作により、ディスクローディングトレイ２を前方向（矢印A_1方向）へ動かす。ディスクローディングトレイ２上に突設したガイド２２はディスクローディングトレイ２とともに前方向へ動く。ガイド２２がレール３３のａ点からｂ点までの間（急傾斜部３３ｂ）を摺動（カム運動）するとき、天蓋３は軸支部４を中心に上方向（矢印B_1方向）へ回動し、天蓋３は第３図一点鎖線で示す位置に開かれる。このように天蓋３が開かれている状態で、ディスクローディングトレイ２は前方向へローディングする。この時、ガイド２２はｂ点からこのストッパ３３ｄまでのま（緩傾斜部３３ｃ）を摺動し、天蓋３は開いた状態のままである（第４図参照）。

次に、閉じる場合を説明する。

開閉ＳＷの操作により、ディスクローディングトレイ２を後方向（矢印A_2方向）へ動かす。ガイド２２が天蓋３のレール３３に係合して後方向へ動く。ガイド２２は天蓋３を開いた状態のままレール３３のストッパ３３ｄからｂ点までの間（緩傾斜部３３ｃ）を摺動する。その後続いて、ガイド２２はｂ点からａ点までの間（急傾斜部３３ｂ）を摺動（カム運動）する。これにより、天蓋３は軸支部４を中心に下方向（矢印B_2方向）へ回動し、ディスクローディングトレイ２および天蓋３は元の位置に復帰する。つまり、第２図に示すように、ディスクローディングトレイ２はキャビネット１内に収納され、天蓋３は閉じられるのである。

（考案の効果）

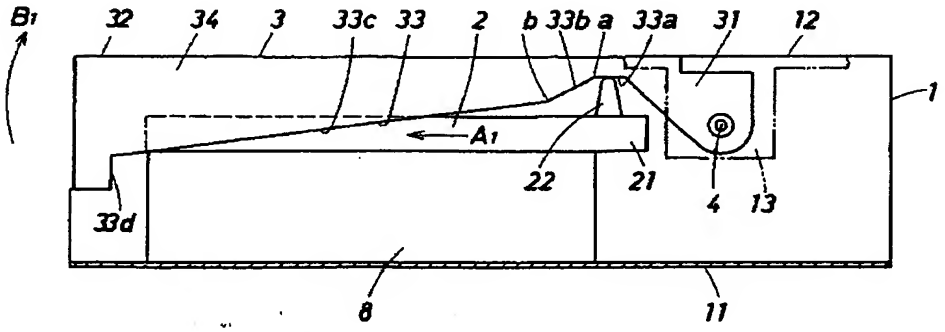
以上述べたように、本考案のディスクプレーヤーによれば、ディスクローディングトレイの前後方向への動作を天蓋の開閉機構の動力として用いるから、部品点数が少なく、軽量で、製造が簡単であるとともに、コストを安くすることができる。

【図面の簡単な説明】

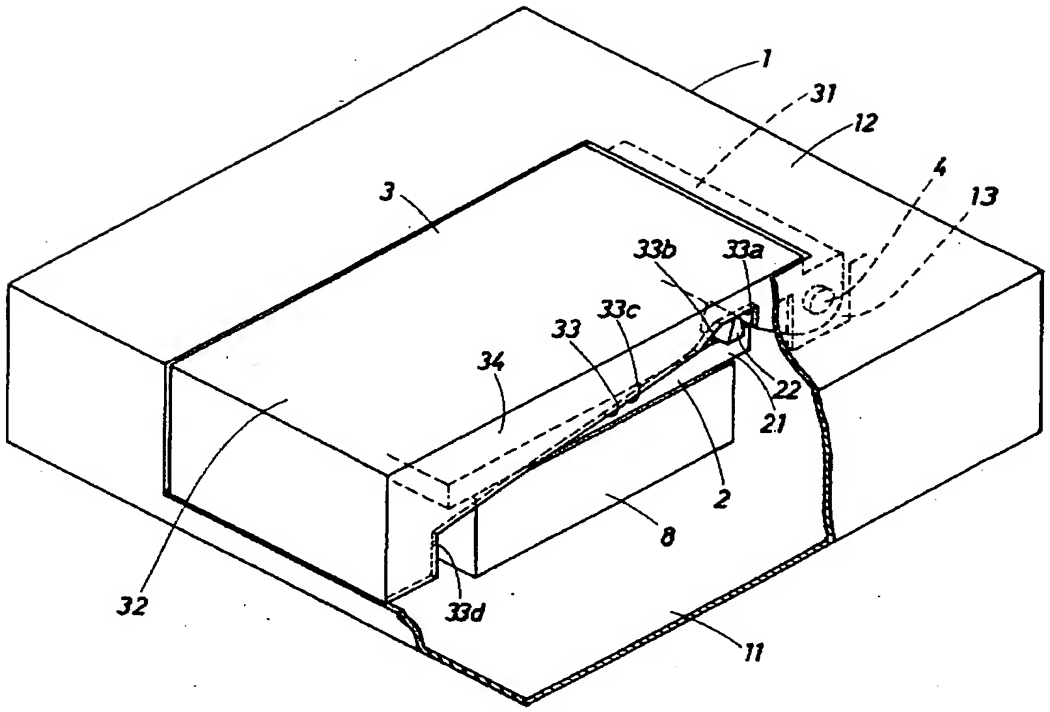
第１図ないし第４図は本考案ディスクプレーヤーの一実施例を示し、第１図は一部を破断した斜視図、第２図は天蓋を閉じ、ディスクローディングトレイがキャビネット内に収納された縦断面図、第３図はディスクローディングトレイが前方向へ出て開く要領を示す縦断面図、第４図はディスクローディングトレイが前方向へ出て天蓋が開いた縦断面図、第５図および第６図は従来例を示し、第５図は天蓋が閉じられディスクローディングトレイがキャビネット内に収納された縦断面図、第６図はディスクローディングトレイが出され天蓋が開いた縦断面図である。

１……キャビネット
２……ディスクローディングトレイ
　２２……ガイド
３……天蓋
　３３……レール、３３ａ……凹部
　３３ｂ……急傾斜部、３３ｃ……緩傾斜部
　３３ｄ……ストッパ
４……軸支部
８……フロントローディングシャーシ

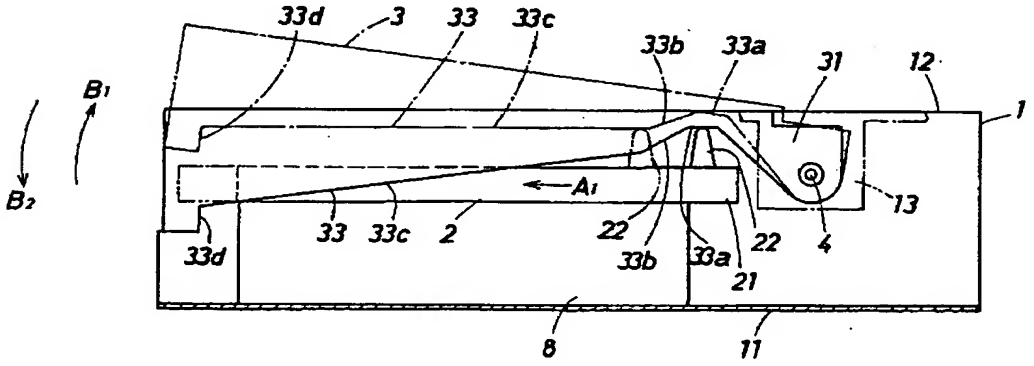
【第２図】



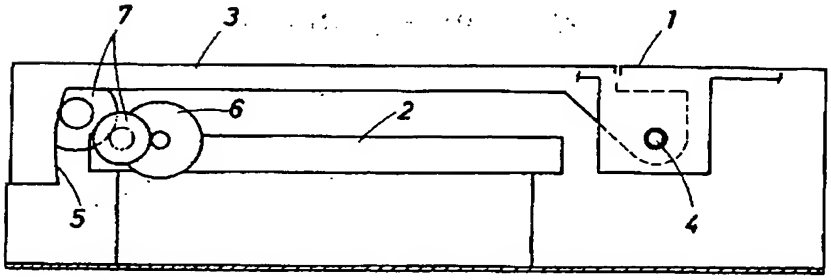
【第１図】


1
31
12
4
13
3
33b
33a
33c
33
34
22
21
2
8
32
33d
11

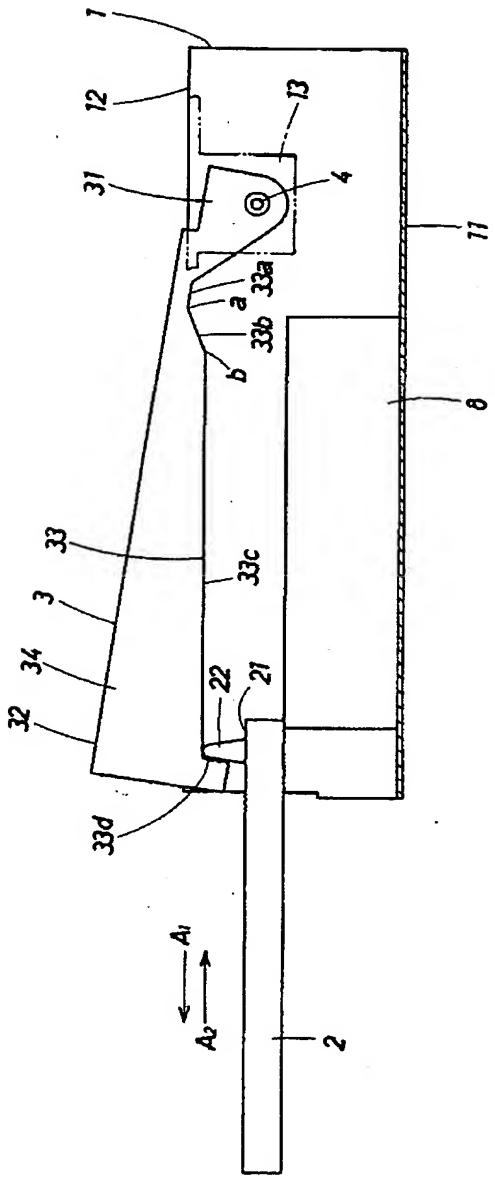
【第３図】


33d
3
33
33c
33b
33a
31
12
1
B1
B2
A1
13
33
33c
2
22
33b
33a
22
4
33d
21
8
11

【第５図】


7
3
1
6
2
5
4

【第４図】



【第６図】